

Air Quality Permit

Issued To:	Williston Basin Interstate Pipeline Company P.O. Box 131 Glendive, MT 59330	Permit #2822-02 Administrative Amendment (AA) Request Received: 03/14/03 Department Decision on AA: 03/27/03 Permit Final: 04/12/03 AFS: #105-002A
------------	--	---

An air quality permit, with conditions, is hereby granted to Williston Basin Interstate Pipeline Company (WBI), pursuant to Sections 75-2-204 and 211 of the Montana Codes Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.701, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

WBI owns and operates a natural gas compressor station and associated equipment located in the Northeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 13, Township 31 North, Range 24 East, near Saco, in Valley County Montana. The facility is known as the Saco Compressor Station.

B. Current Permit Action

On January 23, 2003, the Department of Environmental Quality (Department) received a letter from WBI dated January 20, 2003. WBI requested the Department to amend Montana Air Quality Permit #2822-01 to remove the every-4-year testing requirements from Units #4, #5, #6, #7, #8, #9, and #10 because WBI's Title V Operating Permit #OP2822-00 requires the units to be tested every 6 months.

In addition, on March 14, 2003, the Department received an additional letter from WBI dated March 13, 2003. WBI requested to add a 600-Horsepower Ajax DPC600LE compressor engine (Unit #11) to Permit #2822-01 according to the provisions of ARM 17.8.745.

The current permit action removes the every-4-year testing requirements for Units #4, #5, #6, #7, #8, #9, and #10 from the permit. Also, the current permit action adds the 600-Hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745. Emission limits and testing requirements for the 600-Hp Ajax compressor engine were incorporated into the permit according to the provisions of ARM 17.8.745(2). Further, the permit format, language, and rule references were updated to reflect current Department permit format, language, and rule references.

Section II: Conditions and Limitations

A. Emission Limitations

1. The 300-Hp Ingersoll-Rand compressor engine (Unit #4) shall be operated with an electronic air/fuel ratio (AFR) controller. Emissions from Unit #4 shall not exceed the following (ARM 17.8.749):

NO _x ¹	16.74 lb/hr
CO	10.50 lb/hr

¹NO_x reported as NO₂.

2. The 300-Hp Ingersoll-Rand compressor engine (Unit #5) shall be operated with an electronic AFR controller and a non-selective catalytic reduction (NSCR) unit. Emissions from Unit #5 shall not exceed the following (ARM 17.8.749):

NO_x¹ 2.00 lb/hr
CO 2.00 lb/hr

3. The 300-Hp Ingersoll-Rand compressor engine (Unit #6) shall be operated with an electronic AFR controller and an NSCR unit. Emissions from Unit #6 shall not exceed the following (ARM 17.8.749):

NO_x¹ 2.00 lb/hr
CO 2.00 lb/hr

4. The 660-Hp Ingersoll-Rand compressor engine (Unit #7) shall be operated with an electronic AFR controller and an NSCR unit. Emissions from Unit #7 shall not exceed the following (ARM 17.8.749):

NO_x¹ 4.60 lb/hr
CO 17.50 lb/hr

5. The 600-Hp Ajax compressor engine (Unit #8) shall be operated with an Ajax Low Emission Conversion Kit. Emissions from Unit #8 shall not exceed the following (ARM 17.8.752):

NO_x¹ 8.60 lb/hr
CO 3.97 lb/hr
VOC 6.62 lb/hr

6. The 600-Hp Ajax DPC-600 compressor engine (Unit #9) shall be operated with an Ajax Low Emission Conversion Kit. Emissions from the 600 hp Ajax DPC-600 compressor engine (Unit #9) shall not exceed the following (ARM 17.8.752):

NO_x¹ 8.60 lb/hr
CO 3.97 lb/hr
VOC 6.62 lb/hr

7. The 600-Hp Ajax compressor engine (Unit #10) shall be operated with an Ajax Low Emission Conversion Kit. Emissions from Unit #10 shall not exceed the following (ARM 17.8.752):

NO_x¹ 8.60 lb/hr
CO 3.97 lb/hr
VOC 6.62 lb/hr

8. Emissions from the 600-Hp Ajax compressor engine (Unit #11) shall not exceed the following (ARM 17.8.749):

NO_x¹ 2.65 lb/hr
CO 1.85 lb/hr
VOC 1.72 lb/hr

¹NO_x reported as NO₂.

9. The 190-Hp Waukesha generator engine shall be operated within an AFR range that will minimize both NO_x and CO emissions. The emissions from the generator engine shall not exceed the following (ARM 17.8.752):

NO _x ¹	5.03 lb/hr
CO	5.03 lb/hr
VOC	0.84 lb/hr
10. WBI shall install an automatic AFR controller on the 190-Hp Waukesha generator engine upon establishment of the generator set as the permanent main electrical power supply (ARM 17.8.752).
11. WBI shall operate all equipment at the Saco Compressor Station in compliance with ARM 17.8.304, which states that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any sources or stacks installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
12. WBI shall not cause or authorize the use of any street, road, parking lot, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
13. WBI shall treat all unpaved portions of the access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.12 (ARM 17.8.749).
14. WBI shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.749).

B. Testing Requirements

1. The 190-Hp Waukesha generator engine shall be initially tested for NO_x and CO, concurrently, and the results submitted to the Department in order to demonstrate compliance with the emission limitations contained in Section II.A.9 within 180 days of establishment of the generator as the permanent main electrical power supply (ARM 17.8.105 and ARM 17.8.749).
2. The 600-Hp Ajax compressor engine (Unit #11) shall be initially tested for NO_x and CO, concurrently, to demonstrate compliance with the emission limits in Section II.A.8, within 180 days of initial start up of Unit #11 or within 180 days of the date Permit #2822-02 becomes final, whichever is later. However, Unit #11 shall be initially tested prior to being removed from service (ARM 17.8.749).
3. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. WBI supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. WBI shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit.

The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by WBI as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Monitoring and Record Keeping Requirements

1. WBI shall operate and maintain the AFR controller on Unit #4 and the NSCR units and AFR controllers on Units #5, #6, and #7, within the parameters recommended by the equipment manufacturer.
2. WBI shall, at a minimum, inspect on the compressor engines: the AFR controllers, the NSCR units, and the catalyst in the unit once every 6 months, as well as after every upset condition that could have caused damage to the control equipment. WBI shall conduct any subsequent maintenance to ensure that the control equipment and the catalyst will continue to perform as designed. If the catalyst fails to promote the chemical reactions required to reduce the NO_x and CO emissions to the limits stated in Section II.A, WBI shall replace the catalyst with a new catalyst capable of achieving these limits.
3. WBI shall keep a record of any and all inspections and maintenance conducted on the NSCR units and AFR controllers on the compressor engines.

E. Notification Requirements

1. WBI shall provide the Department of written notification with the actual start up date of the 600-Hp Ajax compressor engine within 15 days after the actual start up date or within 15 days of the date Permit #2822-02 becomes final, whichever is later (ARM 17.8.749).

Section III: General Conditions

- A. Inspection - WBI shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any

- monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if WBI fails to appeal as indicated below.
 - C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving WBI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740 *et seq.* (ARM 17.8.756)
 - D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401 *et seq.*, MCA.
 - E. Appeals - Any person or persons who are jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit, setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until the conclusion of the hearing and issuance of a final decision by the Board.
 - F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the permitted source.
 - G. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by WBI may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
 - H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Williston Basin Interstate Pipeline Company
Permit #2822-02

I. Introduction/Process Description

A. Permitted Equipment

Williston Basin Interstate Pipeline Company (WBI) owns and operates a natural gas compressor station and associated equipment located in the Northeast ¼ of the Southwest ¼ of Section 13, Township 31 North, Range 24 East, near Saco, in Valley County Montana. The facility is known as the Saco Compressor Station. Permitted equipment includes, but is not limited to, the following:

<u>Unit #</u>	<u>Year Inst.</u>	<u>Make</u>	<u>Model</u>	<u>Size</u>	<u>Source</u>
4	1943	Ingersoll-Rand	8XVG	300-Hp	01
5	1945	Ingersoll-Rand	8XVG	300-Hp	02
6	1947	Ingersoll-Rand	8XVG	300-Hp	03
7	1959	Ingersoll-Rand	62 KVG	660-Hp	04
8	1979	Ajax	DPC-600	600-Hp	05
9	1979	Ajax	DPC-600	600-Hp	06
10	1981	Ajax	DPC-600	600-Hp	07
11	Sched. 2003	Ajax	DPC600LE	600-Hp	10
Gen	1986	Waukesha	6-NKRU	190-Hp	08
Furnace	1947	Petro-Chem	regeneration	2.4 MMBtu/hr	09

*Horsepower (Hp)

* million British thermal unit per hour (MMBtu/hr)

Small natural gas-fired building, garage, office, and water heaters¹ include the following:

<u>Unit Type</u>	<u>Year Inst.</u>	<u>Make</u>	<u>Model</u>	<u>Size</u>
Plant boiler #1	1987	Weil-McLain	LGB-6	650,000 Btu/hr
Plant boiler #2	1987	Weil-McLain	LGB-6	650,000 Btu/hr
Water heater	1982	AO Smith	KGA 40	40,000 Btu/hr
Aux. bldg. heater	1983	Modine	PA 200 AB	200,000 Btu/hr
Aux. garage heater	N/A	Janitrol	68-130-81	30,000 Btu/hr
Shop heater	1980	N/A	N/A	250,000 Btu/hr
Meter house heater	N/A	Breust	N/A	10,000 Btu/hr

*British thermal unit per hr (Btu/hr)

B. Source Description

The Saco Compressor Station serves as a natural gas pipeline booster station to transport natural gas gathered in the Bowdoin Field near Saco to storage at the Cabin Creek, Montana storage area and to further sales destinations. This facility was upgraded in order to handle the increased gas volumes of the Bowdoin area development project. The Saco compressor station is designed to boost a maximum of 32.0 million standard cubic feet per day (MMScfd) of natural gas into the pipeline system and has a current average throughput of approximately 25.0 MMScfd.

¹Heaters do not include process heaters or process boilers.

C. Permit History

The Saco Compressor Station was originally constructed by WBI's predecessor, the Montana-Dakota Utilities Company (MDU), in 1934 and the emission sources consisted of three 200-horsepower (Hp) Ingersoll-Rand Imperial XG compressor engines (Units #1, #2, and #3). Over the period from 1934 to 1959, three 300-Hp Ingersoll-Rand 8XVG compressor engines (Units #4, #5, and #6) and a 660-Hp Ingersoll-Rand 62 KVG compressor engine (Unit #7) were added to accomplish capacity upgrades. In addition to the compressor engines, several auxiliary engines were installed during the period between 1934 and 1947. These auxiliary units consisted of the following equipment: two 45-Hp Waukesha VRG 330 cooling fan drivers; one 38-Hp Waukesha BZ for the gas cooler; one 45-Hp Waukesha VRG 330 for the dehydration system; three 12-Hp Waukesha FC drivers for jacket water pumps; two 12-Hp Waukesha FC engines driving air compressors; and a 10-Hp standby generator (243-Hp total).

On November 20, 1974, MDU filed docket No. CP75-154 with the Federal Energy Regulatory Commission (FERC), which requested authority to construct and operate the additional facility necessary for the transportation of natural gas from the Bowdoin Field, near Saco, Montana to storage at the Cabin Creek, Montana storage area and to further sales destinations. During the period from 1974 to 1977 Kansas-Nebraska Gas, Inc. (K-N) aggressively developed the production capacity of the Bowdoin area. In November 1977, K-N completed construction of an extensive gas-gathering network in the Bowdoin Field. Coincidental to this event, and for the purpose of handling K-N's additional gas volumes, WBI initiated a pipeline capacity upgrade project, which included construction of the Vida Compressor Station and installation of two Ajax DPC-600 compressor engines at the Saco Compressor Station (Units #8 & #9).

WBI was issued a FERC certificate on May 11, 1977, to construct and operate those facilities identified in docket No. CP75-154. The purchase order for Units #8 and #9 was issued on March 31, 1978, with a no-charge cancellation date of August 15, 1978. The actual on-site construction of Units #8 and #9 at the Saco station began on April 1, 1979, and was completed by April 26, 1979.

In 1981, WBI decommissioned the three 200-Hp Ingersoll-Rand Imperial XG compressor engines (Units #1, 2, & 3) and replaced their horsepower with a 600-Hp Ajax DPC-600 compressor engine (Unit #10). The purchase order for Unit #10 was issued on July 28, 1980, with a no-charge cancellation date of November 1, 1980. The actual installation of Unit #10 was on April 1, 1981, and the project was completed by June 14, 1982. Unit #10 was originally installed with the high air cylinder modification. This engine modification increases the volume of scavenged air during the purge stroke, thus effectively lowering combustion temperatures.

In 1986, WBI replaced the auxiliary drivers at the Saco station (243-Hp total) with electric motors. In conjunction with this switch to electric drivers, a 190-Hp Waukesha 6-NKRU/F1905G standby generator set was installed.

In June 1992, WBI modified Unit #9, a 600 hp Ajax DPC-600 compressor engine, with the high air cylinder modification. This engine modification lowered the NO_x emissions from 15.5 grams per brake horsepower-hour (grams/bhp-hr) to 6.5 grams/bhp-hr and also resulted in a minor increase in fuel efficiency.

In May 1993, WBI had an emission source test conducted to determine the NO_x and CO emissions from the 300-Hp Ingersoll-Rand 8XVG compressor engine (Unit #4) and the modified 600-Hp Ajax DPC-600 compressor engine (Unit #9). The results of the source test for Unit #4, based on averaging the three tests, were 13.29 pounds per hour (lb/hr) or 20.62 grams/hp-hr for NO_x and 2.79 lb/hr or 4.34 grams/hp-hr for CO. The results of the source test for Unit #4 were inconclusive for NO_x because of errors in the testing procedures, but were used to help estimate emissions from Units #4, #5 and #6. The results of the source test for Unit #9, based on averaging the three tests, were 2.91 lb/hr or 2.87 grams/hp-hr for NO_x and 1.05 lb/hr or 1.03 grams/hp-hr for CO.

In addition to the seven compressor engines (Units #4 - #10) and the standby generator, there are eight natural gas-fired boilers/heaters. The boilers/heaters range from 10,000 British thermal units per hour (Btu/hr) to 2.4 million British thermal units per hour (MMBtu/hr) maximum heat input. All of the boilers/heaters were installed at various dates between 1934 and 1987 (Reference Section I.A of this permit analysis). At the time of the initial permit application review, the Saco compressor station had estimated potential NO_x and CO emissions of 567.3 and 176.90 tons per year (ton/yr), respectively. A Best Available Control Technology (BACT) analysis was conducted as part of the permit review process and, as a result of the Department of Environmental Quality's (Department) BACT determination, the permitted potential emissions would be reduced to 474.60 and 223.06 ton/yr for NO_x and CO, respectively, by the addition of control equipment and enforceable emission limits.

The Department issued a Department Decision (DD) for a prevention of significant deterioration of air quality (PSD) permit for the WBI Saco compressor station on January 19, 1995. The Environmental Protection Agency (EPA) filed an appeal on February 3, 1995, to challenge the BACT determination made by the Department. EPA cited a need for national uniformity in making such determinations for a PSD permit. A stipulated settlement agreement (stipulation) between the Department, EPA, and WBI was agreed to, which eliminated the issues raised by EPA in the appeal.

The stipulation required WBI to make modifications to the Saco compressor station in order to reduce the facility's potential NO_x emissions below 250 ton/yr. WBI was required to install and operate air/fuel ratio (AFR) controllers and/or non-selective catalytic reduction (NSCR) units on any or all of Units #4, 5, 6, and 7 in order to keep the combined potential emissions from Units #4, #5, #6, and #7 below 111.0 ton/yr NO_x and 149.0 ton/yr CO. WBI was also required to install and operate all necessary controls by August 1, 1996. Upon issuance of Permit #2822-00, the Saco compressor station was no longer considered a major stationary source, which removed the facility from the PSD permitting requirements. After the installation of the necessary control equipment, NO_x and CO emission limits for Units #4, #5, #6, and #7 were to be established in a permit modification. Permit #2822-00 became final on May 19, 1995.

On February 12, 1996, the Department received a request for a permit modification, with the proposed emission limits for Units #4, #5, #6, and #7. The modification incorporated the emission control requirements and established NO_x and CO emission limits for Units #4, #5, #6, and #7, as required by Section II.A.6 and II.A.7 of Permit #2822-00. In addition, the testing, monitoring, and record keeping requirements were updated. Permit #2822-01 replaced Permit #2822-00 on September 1, 1996.

D. Current Permit Action

On January 23, 2003, the Department received a letter from WBI dated January 20, 2003. WBI requested the Department to amend Montana Air Quality Permit #2822-01 to remove the every-4-year testing requirements from Units #4, #5, #6, #7, #8, #9, and #10 because WBI's Title V Operating Permit #OP2822-00 requires the units to be tested every 6 months.

In addition, on March 14, 2003, the Department received an additional letter from WBI dated March 13, 2003. WBI requested to add a 600-Horsepower (Hp) Ajax DPC600LE compressor engine (Unit #11) to Permit #2822-01 according to the provisions of ARM 17.8.745.

The current permit action removes the every-4-year testing requirements for Units #4, #5, #6, #7, #8, #9, and #10 from the permit. Also, the current permit action adds the 600-Hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745. Emission limits and testing requirements for the 600-Hp Ajax compressor engine were incorporated into the permit according to the provisions of ARM 17.8.745(2). Further, the permit format, language, and rule references were updated to reflect current Department permit format, language, and rule references. Permit **#2822-02** replaces Permit #2822-01.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for the location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices), and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

WBI shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Oxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Dioxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

WBI must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, WBI shall not cause or authorize the use of any street, road or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
6. ARM 17.8.340 Standard of Performance for New Stationary Sources. The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the standards and provisions of 40 CFR Part 60. Subpart KKK, Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants is not applicable to this facility because the facility does not meet the definition of a natural gas processing plant.
7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The owner or operator of any affected source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63.

40 CFR 63, Subpart HH National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HH. WBI shall comply with the standards and provisions of 40 CFR Part 63, Subpart HH, as appropriate.

40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. WBI shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH, as appropriate.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. The current permit adds a 600-Hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745. Therefore, the current permit action is considered an administrative action and WBI was not required to submit a permit application fee.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

- E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit alteration if they construct, alter or use any air contaminant sources that have the potential to emit greater than 25 tons per year of any pollutant. WBI has the potential to emit more than 25 tons per year of NO_x, CO, and VOC; therefore, an air quality permit is required.
 3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
 4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that are not subject to the Montana Air Quality Permit Program.
 5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. The current permit action adds a 600-Hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745; therefore, WBI was not required to submit a permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. The current permit action adds a 600-Hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745; therefore, WBI was not required to notify the public of the current permit action.
 6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
 7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
 9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving WBI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
 10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
 11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
 12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
 13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, subchapters 8, 9, and 10.
 14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.
- F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications-- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a listed source, but emissions are greater than 250 tons per year after the addition of the new compressor engine (Unit #11); therefore, the facility is now major. However, the emissions from the project are less than 250 tons per year; therefore, the facility was not subject to the New Source Review (NSR) program for this permit action. However, the next permit action at this facility with potential emissions above PSD significant levels may likely trigger the NSR program.

G. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. Potential To Emit (PTE) > 100 tons/year of any pollutant;
 - b. PTE >10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2822-02, the following conclusions were made:
 - a. The facility's PTE is greater than 100 tons/year for NO_x, CO, and VOC;
 - b. HAP emissions have not been quantified for the facility;
 - c. This source is not located in a serious PM₁₀ nonattainment area;
 - d. This facility is not subject to any current NSPS
 - e. This facility is not subject to any current NESHAP standards
 - f. This source is neither a Title IV affected source nor a solid waste combustion unit; and
 - g. This source is a "major source" as designated by Title V.

Based on these conclusions, the Department determined that WBI is a major source of emissions as defined under Title V. The final Title V Operating Permit #OP2822-00 for this facility was issued by the Department on October 31, 1998. The Department will modify the Title V permit to reflect the addition of the 600-Hp compressor engine.

III. BACT Determination

A BACT determination is required for each new or altered source. WBI shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that the best available control technology shall be utilized. However, the current permit action adds the 600-Hp compressor engine to the permit according to the provisions of ARM 17.8.745 and the change is not subject to the BACT requirements.

IV. Emission Inventory

Source	Tons/Year				
	PM ₁₀	NO _x	VOC	CO	SO _x
300 Ingersoll-Rand 8XVG (Unit #4)	0.14	73.14	4.37	45.91	0.01
300 Ingersoll-Rand 8XVG (Unit #5)	0.14	8.73	2.17	8.73	0.01
300 Ingersoll-Rand 8XVG (Unit #6)	0.14	8.73	2.17	8.73	0.01
660 Ingersoll-Rand 62-KVG (Unit #7)	0.26	20.10	4.80	76.47	0.01
600 hp Ajax DPC-600 (Unit #8)	0.22	37.58	28.91	17.34	0.01
600 hp Ajax DPC-600 (Unit #9)	0.22	37.58	28.91	17.34	0.01
600 hp Ajax DPC-600 (Unit #10)	0.22	37.58	28.91	17.34	0.01
600 hp Ajax DPC600LE (Unit #11)	0.22	14.49	5.79	7.53	0.01
190 hp Waukesha 6NKRU (Gen)	0.08	21.97	3.66	21.97	0.00
Petro-Chem Regen. Furnace	0.13	1.09	0.12	0.23	0.01
Plant Boilers #1 & #2	0.07	0.59	0.07	0.12	0.00
Misc. Heaters	0.03	0.27	0.03	0.11	0.00
Total	1.87	261.85	109.91	221.82	0.09

300-Hp Ingersoll-Rand 8XVG (Unit #4)

Horsepower: 300 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEFpage 32)
Fuel Consumption: 10,000 Btu/hp-hr (Maximum Design)
Calculations: $10,000 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 300 \text{ Hp} * 8760 \text{ hr/yr} = 27,357,480 \text{ Scf/yr}$
 $27,357,480 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.14 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 25.30 gram/hp-hr (Based on company information)
Calculations: $25.30 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 16.74 \text{ lb/hr}$
 $16.74 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 73.14 \text{ ton/yr}$

VOC Emissions:

Emission factor: 1.51 gram/hp-hr (Based on company information)
Calculations: $1.51 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 1.00 \text{ lb/hr}$
 $1.00 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 4.37 \text{ ton/yr}$

CO Emissions:

Emission factor: 15.88 gram/hp-hr (Based on company information)
Calculations: $15.88 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 10.50 \text{ lb/hr}$
 $10.50 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 45.91 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 0.001 \text{ lb/hr}$
 $0.001 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

300-Hp Ingersoll-Rand 8XVG (Unit #5)

Horsepower: 300 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEF page 32)
Fuel Consumption: 10,000 Btu/hp-hr (Maximum Design)
Calculations: $10,000 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 300 \text{ hp} * 8760 \text{ hr/yr} = 27,357,480 \text{ Scf/yr}$
 $27,357,480 \text{ Scf/yr} * 10 \text{ lb/MMScf}_3 \text{ gas} * 0.0005 \text{ ton/lb} = 0.14 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 3.02 gram/hp-hr (Based on company information)
Calculations: $3.02 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 2.00 \text{ lb/hr}$
 $2.00 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 8.73 \text{ ton/yr}$

VOC Emissions:

Emission factor: 0.75 gram/hp-hr (Based on company information)
Calculations: $0.75 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 0.50 \text{ lb/hr}$
 $0.50 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.17 \text{ ton/yr}$

CO Emissions:

Emission factor: 3.02 gram/hp-hr (Based on company information)
Calculations: $3.02 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 2.00 \text{ lb/hr}$
 $2.00 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 8.73 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 0.001 \text{ lb/hr}$
 $0.001 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

300-Hp Ingersoll-Rand 8XVG (Unit #6)

Horsepower: 300 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEF page 32)
Fuel Consumption: 10,000 Btu/hp-hr (Maximum Design)
Calculations: $10,000 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 300 \text{ hp} * 8760 \text{ hr/yr} = 27,357,480 \text{ Scf/yr}$
 $27,357,480 \text{ Scf/yr} * 10 \text{ lb/MMScf}_3 \text{ gas} * 0.0005 \text{ ton/lb} = 0.14 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 3.02 gram/hp-hr (Based on company information)
Calculations: $3.02 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 2.00 \text{ lb/hr}$
 $2.00 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 8.73 \text{ ton/yr}$

VOC Emissions:

Emission factor: 0.75 gram/hp-hr (Based on company information)
Calculations: $0.75 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 0.50 \text{ lb/hr}$
 $0.50 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.17 \text{ ton/yr}$

CO Emissions:

Emission factor: 3.02 gram/hp-hr (Based on company information)
Calculations: $3.02 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 2.00 \text{ lb/hr}$
 $2.00 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 8.73 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 300 \text{ hp} * 0.002205 \text{ lb/gram} = 0.001 \text{ lb/hr}$
 $0.001 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

660-Hp Ingersoll-Rand 62-KVG (Unit #7)

Horsepower: 660 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEF page 32)
Fuel Consumption: 8500 Btu/hp-hr (Maximum Design)
Calculations: $8500 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 660 \text{ hp} * 8760 \text{ hr/yr} = 51,158,488 \text{ Scf/yr}$
 $51,158,488 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.26 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 3.16 gram/hp-hr (Based on company information)
Calculations: $3.16 \text{ gram/hp-hr} * 660 \text{ hp} * 0.002205 \text{ lb/gram} = 4.60 \text{ lb/hr}$
 $4.60 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 20.10 \text{ ton/yr}$

VOC Emissions:

Emission factor: 0.75 gram/hp-hr (Based on company information)
Calculations: $0.75 \text{ gram/hp-hr} * 660 \text{ hp} * 0.002205 \text{ lb/gram} = 1.10 \text{ lb/hr}$
 $1.10 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 4.80 \text{ ton/yr}$

CO Emissions:

Emission factor: 12.02 gram/hp-hr (Based on company information)
Calculations: $12.02 \text{ gram/hp-hr} * 660 \text{ hp} * 0.002205 \text{ lb/gram} = 17.50 \text{ lb/hr}$
 $17.50 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 76.47 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 660 \text{ hp} * 0.002205 \text{ lb/gram} = 0.003 \text{ lb/hr}$
 $0.003 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

600-Hp Ajax DPC-600 (Unit #8)

Horsepower: 600 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEF page 32)
Fuel Consumption: 8100 Btu/hp-hr (Maximum Design)
Calculations: $8100 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 600 \text{ hp} * 8760 \text{ hr/yr} = 44,617,133 \text{ Scf/yr}$
 $44,617,133 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.22 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 6.50 gram/hp-hr (Based on BACT determination)
Calculations: $6.50 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 8.60 \text{ lb/hr}$
 $8.60 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 37.58 \text{ ton/yr}$

VOC Emissions:

Emission factor: 5.00 gram/hp-hr (Based on BACT determination)
Calculations: $5.00 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 6.62 \text{ lb/hr}$
 $6.62 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 28.91 \text{ ton/yr}$

CO Emissions:

Emission factor: 3.00 gram/hp-hr (Based on BACT determination)
Calculations: $3.00 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 3.97 \text{ lb/hr}$
 $3.97 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 17.34 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 0.003 \text{ lb/hr}$
 $0.003 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

600-Hp Ajax DPC-600 (Unit #9)

Horsepower: 600 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEF page 32)
Fuel Consumption: 8100 Btu/hp-hr (Maximum Design)
Calculations: $8100 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 600 \text{ hp} * 8760 \text{ hr/yr} = 44,617,133 \text{ Scf/yr}$
 $44,617,133 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.22 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 6.50 gram/hp-hr (Based on BACT determination)
Calculations: $6.50 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 8.60 \text{ lb/hr}$
 $8.60 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 37.58 \text{ ton/yr}$

VOC Emissions:

Emission factor: 5.00 gram/hp-hr (Based on BACT determination)
Calculations: $5.00 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 6.62 \text{ lb/hr}$
 $6.62 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 28.91 \text{ ton/yr}$

CO Emissions:

Emission factor: 3.00 gram/hp-hr (Based on BACT determination)
Calculations: $3.00 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 3.97 \text{ lb/hr}$
 $3.97 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 17.34 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 0.003 \text{ lb/hr}$
 $0.003 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

600-Hp Ajax DPC-600 (Unit #10)

Horsepower: 600 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (2-02-002-02, AFSEF page 32)
Fuel Consumption: 8100 Btu/hp-hr (Maximum Design)
Calculations: $8100 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 600 \text{ hp} * 8760 \text{ hr/yr} = 44,617,133 \text{ Scf/yr}$
 $44,617,133 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.22 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 6.50 gram/hp-hr (Based on BACT determination)
Calculations: $6.50 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 8.60 \text{ lb/hr}$
 $8.60 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 37.58 \text{ ton/yr}$

VOC Emissions:

Emission factor: 5.00 gram/hp-hr (Based on BACT determination)
Calculations: $5.00 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 6.62 \text{ lb/hr}$
 $6.62 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 28.91 \text{ ton/yr}$

CO Emissions:

Emission factor: 3.00 gram/hp-hr (Based on BACT determination)
Calculations: $3.00 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 3.97 \text{ lb/hr}$
 $3.97 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 17.34 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 0.003 \text{ lb/hr}$
 $0.003 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

600-Hp Ajax DPC600LE (Unit #11)

Horsepower: 600 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lb/MMScf (Fire, PC Version, 1/95, 2-02-002-02}
Fuel Consumption: 7,950 Btu/hp-hr (Maximum Design)
Calculations: $7,950 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 600 \text{ hp} * 8760 \text{ hr/yr} = 43,498,393 \text{ Scf/yr}$
 $43,498,393 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.22 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 2.5 gram/hp-hr (Information from Manufacturer)
Calculations: $2.5 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 3.31 \text{ lb/hr}$
 $3.31 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 14.49 \text{ ton/yr}$

VOC Emissions:

Emission factor: 1.3 gram/hp-hr (Information from Manufacturer)
Calculations: $1.3 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 1.72 \text{ lb/hr}$
 $1.72 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 7.53 \text{ ton/yr}$

CO Emissions:

Emission factor: 1.3 gram/hp-hr (Information from Manufacturer)
Calculations: $1.3 \text{ gram/hp-hr} * 600 \text{ hp} * 0.002205 \text{ lb/gram} = 1.72 \text{ lb/hr}$
 $1.72 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 7.53 \text{ ton/yr}$

SO_x Emissions:

Emission Factor: 0.60 lb/MMScf (Fire, PC Version, 1/95, 2-02-002-02}
Fuel Consumption: 7,950 Btu/hp-hr (Maximum Design)
Calculations: $7,950 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 600 \text{ hp} * 8760 \text{ hr/yr} = 43,498,393 \text{ Scf/yr}$
 $43,498,393 \text{ Scf/yr} * 0.60 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

190-Hp Waukesha 6NKRU Generator

Horsepower: 190 hp
Hours of operation: 8760 hr/yr

PM₁₀ Emissions:

Emission Factor: 10 lbs/MMScf (2-02-002-02, AFSEF page 32}
Fuel Consumption: 9000 Btu/hp-hr (Maximum Design)
Calculations: $9000 \text{ Btu/hp-hr} * 0.001041 \text{ Scf/Btu} * 190 \text{ hp} * 8760 \text{ hr/yr} = 15,698,621 \text{ Scf/yr}$
 $15,698,621 \text{ Scf/yr} * 10 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.08 \text{ ton/yr}$

NO_x Emissions:

Emission factor: 12.00 gram/hp-hr (Based on BACT determination)
Calculations: $12.00 \text{ gram/hp-hr} * 190 \text{ hp} * 0.002205 \text{ lb/gram} = 5.0274 \text{ lb/hr}$
 $5.03 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 21.97 \text{ ton/yr}$

VOC Emissions:

Emission factor: 2.00 gram/hp-hr (Based on BACT determination)
Calculations: $2.00 \text{ gram/hp-hr} * 190 \text{ hp} * 0.002205 \text{ lb/gram} = 0.84 \text{ lb/hr}$
 $0.84 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 3.66 \text{ ton/yr}$

CO Emissions:

Emission factor: 12.00 gram/hp-hr (Based on BACT determination)
Calculations: $12.00 \text{ gram/hp-hr} * 190 \text{ hp} * 0.002205 \text{ lb/gram} = 5.03 \text{ lb/hr}$
 $5.03 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 21.97 \text{ ton/yr}$

SO_x Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Table 3.2-1, 9/85)
Calculations: $0.002 \text{ gram/hp-hr} * 190 \text{ hp} * 0.002205 \text{ lb/gram} = 0.001 \text{ lb/hr}$
 $0.001 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

2.4 MMBtu/hr Petro-Chem Regen. Furnace

Hours of Operation: 8760
Fuel Consumption: $2.40 \text{ MMBtu/hr} * 0.001041 \text{ scf/Btu} * 8760 \text{ hr/yr} = 21.8860 \text{ MMScf/yr}$

PM₁₀ Emissions:

Emission Factor: 12 lb/MMScf (AP-42, 1.4-1, 10/92)
Fuel Consumption: 21.8860 MMScf/yr (Information from company)
Calculations: $21.89 \text{ MMScf/yr} * 12 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.13 \text{ ton/yr}$

NO_x Emissions:

Emission Factor: 100 lb/MMScf (AP-42, 1.4-2, 10/92)
Fuel Consumption: 21.886 MMScf/yr (Information from company)
Calculations: $21.89 \text{ MMScf/yr} * 100 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 1.09 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 11.00 lb/MMScf (AP-42, 1.4-3, 10/92)
Fuel Consumption: 21.886 MMScf/yr (Information from company)
Calculations: $21.89 \text{ MMScf/yr} * 11.00 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.12 \text{ ton/yr}$

CO Emissions:

Emission Factor: 21 lb/MMScf (AP-42, 1.4-2, 10/92)
Fuel Consumption: 21.886 MMScf /yr (Information from company)
Calculations: $21.89 \text{ MMScf /yr} * 21 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.23 \text{ ton/yr}$

SO_x Emissions:

Emission Factor: 0.60 lb/MMScf (AP-42, 1.4-2, 10/92)
Fuel Consumption: 21.886 MMScf /yr (Information from company)
Calculations: $21.89 \text{ MMScf/yr} * 0.60 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

Plant Boilers #1 & #2

Type	Make/Model	Size
Space Heater	Weil-McLain LGB-6	650,000 Btu/hr
Space Heater	Weil-McLain LGB-6	650,000 Btu/hr
		1,300,000 Btu/hr

Fuel Consumption: $1.3 \text{ MMBtu/hr} * 0.001041 \text{ MMScf/MMBtu} * 8760 \text{ hr/yr} = 11.85 \text{ MMScf/yr}$

PM₁₀ Emissions:

Emission Factor: 12.0 lb/MMScf (AP-42, 1.4-1, 10/92)
 Fuel Consumption: 11.8549 MMScf/yr (Information from company)
 Calculations: $11.85 \text{ MMScf/yr} * 12.0 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.07 \text{ ton/yr}$

NO_x Emissions:

Emission Factor: 100 lb/MMScf (AP-42, 1.4-2, 10/92)
 Fuel Consumption: 11.8549 MMScf/yr (Information from company)
 Calculations: $11.85 \text{ MMScf/yr} * 100 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.59 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 11.0 lb/MMScf (AP-42, 1.4-3, 10/92)
 Fuel Consumption: 11.8549 MMScf/yr (Information from company)
 Calculations: $11.85 \text{ MMScf/yr} * 11.0 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.07 \text{ ton/yr}$

CO Emissions:

Emission Factor: 21 lb/MMScf (AP-42, 1.4-2, 10/92)
 Fuel Consumption: 11.8549 MMScf/yr (Information from company)
 Calculations: $11.85 \text{ MMScf/yr} * 21 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.12 \text{ ton/yr}$

SO_x Emissions:

Emission Factor: 0.6 lb/MMScf (AP-42, 1.4-2, 10/92)
 Fuel Consumption: 11.8549 MMScf/yr (Information from company)
 Calculations: $11.85 * \text{MMScf/yr} * 0.6 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

Miscellaneous Heaters

Type	Make/Model	Size
Water Heater	A.O. Smith KGA 40	40,000 Btu/hr
Aux. Bldg Heater	Modine PA 200 AB	200,000 Btu/hr
Aux. Garage Heater	Janitrol 68-130-8	130,000 Btu/hr
Shop Heater	N/A	250,000 Btu/hr
Meter House Heater	Breust	10,000 Btu/hr
		630,000 Btu/hr

Fuel Consumption $0.63 \text{ MMBtu/hr} * 0.001041 \text{ MMScf/MMBtu} * 8760 \text{ hr/yr} = 5.7451 \text{ MMScf/yr}$

PM₁₀ Emissions:

Emission Factor: 11.18 lb/MMScf (AP-42, 1.4-1, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: $5.75 \text{ MMScf/yr} * 11.18 \text{ lb/ MMScf gas} * 0.0005 \text{ ton/lb} = 0.03 \text{ ton/yr}$

NO_x Emissions:

Emission Factor: 94 lb/ MMScf (AP-42, 1.4-2, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: $5.75 \text{ MMScf /yr} * 94 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.27 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 11.00 lb/MMScf (AP-42, 1.4-3, 10/92)
Fuel Consumption: 5.74507 MMScf/yr {Information from company}
Calculations: $5.75 \text{ MMScf /yr} * 11.00 \text{ lb/ MMScf gas} * 0.0005 \text{ ton/lb} = 0.03 \text{ ton/yr}$

CO Emissions:

Emission Factor: 40 lb/ MMScf (AP-42, 1.4-2, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: $5.75 \text{ MMScf /yr} * 40 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.11 \text{ ton/yr}$

SO_x Emissions:

Emission Factor: 0.60 lb/MMScf (AP-42, 1.4-2, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: $5.75 \text{ MMScf/yr} * 0.60 \text{ lb/MMScf gas} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

V. Existing Air Quality

The area is classified as attainment or “unclassifiable” for all criteria pollutants. The existing air quality of the area is expected to be in compliance with all state and federal requirements.

VI. Ambient Air Impact Analysis

For Permit #2822-00, WBI modeled the NO₂ emissions from the facility to demonstrate compliance with the Montana ambient air quality standards (MAAQS) and the national ambient air quality standards (NAAQS). On January 19, 1995, when the Department decision was issued for Permit #2822-00, the PSD regulations applied to the Saco facility, but no increment analysis was performed as the station pre-dated the NO_x increment baseline. The NO_x increment baseline date for the area is February 8, 1988.

The modeling used the EPA's ISC2 dispersion model and included building downwash parameters. The controlling receptors were placed either on the fence line of the project (25 meter spacing), or within the first 300 meters of the polar grid. No complex terrain was located close enough to require the use of a complex terrain model. Five years of meteorological data from the Glasgow and Bismarck NWS stations were used for the analysis, as per agreement with the Department.

All NO_x emissions from the stacks were assumed to be in the form of NO₂ for the modeling analysis. The facility was modeled at an annual NO₂ emission rate of 475.6 tons/year. Hourly NO₂ analysis results were adjusted using the Ozone Limiting Method (OLM) and an assumed ozone concentration of 0.1 parts per million (PPM) (Montana annual standard). NO₂ concentrations were adjusted by multiplying the modeling results by 0.10 (thermal NO_x to NO₂

conversion factor) and adding 188 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for ozone conversion. The highest second-high hourly NO_2 concentration predicted was $373.5 \mu\text{g}/\text{m}^3$ after adding in a background value of $75 \mu\text{g}/\text{m}^3$. Annual results were not adjusted from the 100% NO_x to NO_2 assumption; therefore, the results over predict by a factor of two or more. The highest annual prediction reported was $89.9 \mu\text{g}/\text{m}^3$ after adding in a background value of $6 \mu\text{g}/\text{m}^3$. The modeling analysis demonstrated that the facility would not violate the MAAQS/NAAQS. Because the current NO_x emissions (258.95 tons/year) from the facility remain below the modeled NO_x emission rate (475.6 tons/year), the modeling still demonstrates that the facility will not cause or contribute to a violation of the MAAQS/NAAQS.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

The current permit action adds a 600-Hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745; therefore, the current permit action does not require an Environmental Assessment.

Analysis Prepared By: Dave Aguirre
Date: March 24, 2003